

QUALITY, QUANTITY AND SAFETY

Checking for Quantity



Dean the Petroleum Inspector pulls into a gas station in his pickup truck. It's an ordinary blue truck, but the odd trailer it pulls looks like a UFO on wheels. It's called a "test measure" and it performs a very important job. After telling the manager of the gas station that it's inspection time, Dean puts the nozzle of the gas pump into the test measure and pumps five gallons of gas into it. The gas pump and the test measurer both register an amount, and Dean compares the pump's numbers with his own precision flow meter. After all, when you pay for

five gallons of gas, you want to be sure you get it. This time the gas pump passes the test. The "Regulatory Services" sticker you see on the side of the pump lets you know you can buy with confidence.

Frank also works for Regulatory Services, but he has a very different job. He takes along some standard weights--metal objects whose exact weight is known--and puts them on the scales in stores. Like the gas pump, those scales should say five pounds if the weight is five pounds. Since you buy fruit, vegetables, and meat by the pound, this job is an important part of making sure you get the food you pay for. Those scales also wear a "Weights and Measures" sticker. Frank's partner Jim helps him inspect stores, but his job does not involve weights at all. He checks the UPC stickers on goods for sale and makes sure the cash register charges you the same amount as the price written on the shelf. When UPCs first came out, people were worried that a store could actually charge you more than the price on the shelf.. With people like Jim on the job, people can enjoy the convenience of quick scanning groceries without worrying about dishonesty.



What happens when the inspectors are not looking? How can they be sure that scales and pumps are working right all the time? They can't be absolutely sure, but they keep the dates and times when inspections are made a carefully guarded secret. They could drop in any day! That way, only businesses with year-round honesty are rewarded with the "Weights and Measures" sticker required on all measuring devices where goods are bought and sold.

Checking for Quality



Quick, what is the difference between water and gasoline? Not only does gasoline cost more (even if you're buying bottled spring water!) but it works better in your car's engine. Chances are, you can't tell how pure that gas is just by looking at it or smelling it. That's where the petroleum quality control laboratory comes in.

Randy sends in samples of gasoline in shiny new metal cans. Not only do they look clean, but they are chemically pure, free of even the tiniest amounts of contamination your store bought cleaners

may leave behind. When you're performing sensitive scientific tests on gas, you don't want the cans to smell "lemon fresh" or "retain their shine with an invisible barrier of protection." You want nothing in--or on--the can but gasoline!

In some ways gasoline is more like milk than water. A glass of pure water is made up of billions of water molecules, each one the same. Gasoline, like milk, is a very complicated substance that looks the same all over but is made up of a large number of ingredients. Most of the ingredients burn when lit, but some of them burn better than others. The one ingredient that best determines the quality of gasoline is named Octane. The more octane there is in a tank full of gas, the better the car will run.



When you buy gas, the more expensive gasoline contains more octane, and the amount is shown by a number called the "octane rating." The higher the octane rating, the better the gas. Like everyone else that does inspections from Regulatory Services Division, Randy wants to make sure you get what you are paying for, so he makes sure the octane rating printed on the gas pumps matches the samples he took. To the left, you see a chemist running tests in the petroleum lab.

Just as important as what should be there, is what should be missing. Tests also reveal contaminants in gasoline. Water and dirt do not belong in your gas tank! Tiny amounts of contaminants are found at every gas pump, but the amounts are kept so small that they do not matter. This helps protect your car's engine.

Checking for Safety



Chances are you are careful with what you eat. You wash your hands before coming to the table, and if you see milk in the refrigerator that has expired, you don't drink it. Well, you shouldn't anyway... The idea of food safety at home is based on your confidence that food from the store comes to you clean and unspoiled, and if you treat it right, it will remain clean and unspoiled.

Who makes sure that food is safe when it is sold to you? The inspectors of the Regulatory Services Division!

Kevin is doing a food store inspection. He looks inside a band saw used to cut meat to be sure it is cleaned each day. While he's at it, he will do a number of other spot checks, making sure that the dishwasher used to wash dirty tools is hot enough, that the floor is clean, and that the store is free of pests. When he finishes, he gives the store a score...a grade like you get on school work...with a list of things that had better be fixed by his next visit. Kevin never drinks expired milk, and he never wants people buying contaminated food.

Regulatory Services protects your safety in a number of other ways. They make sure the pesticides that keep your food, your home, and your community pest free are applied safely by trained people. They protect animals and plants from diseases and pests.

Their jobs often require a great deal of training and expensive equipment. One scale in the chemistry lab can weigh the ink in your signature! They often go into unpleasant places at strange hours, take long road trips and work in the rain and snow. They are rarely seen by the public and they almost never get their name in the paper. But the talented men and women of the Regulatory Services Division are always out there working for you. The thanks they get is knowing they make Tennessee safer for all of us.

